

CLAIMS

1. A keyless entry system comprising:

a key device for carrying out locking and unlocking operations;

5 a mobile terminal provided with a mobile terminal transmitting/receiving unit for transmitting user-ID number data used for identifying a user of the key device; and

a key security system provided with a key device transmitting/receiving unit for receiving the user-ID number data from the mobile terminal,

10 said key security system comprising: an ID-number data comparison unit for recognizing a fact that key-device ID number data pre-stored in the key device is identical to the user-ID number data transmitted from the mobile terminal; and a key-device ECU for receiving an unlock enable signal and outputting a lock control signal to the key device so as to unlock the key device by the lock control signal.

2. The keyless entry system according to claim 1, wherein the key device is an engine start device for starting and stopping a vehicle engine in accordance with either one of an operation of the mobile terminal and automatic recognition between transmitting/receiving units provided in the key device and the mobile terminal.

25 3. The keyless entry system according to claim 1, wherein the key device is a door lock device for locking and unlocking a door in

accordance with either one of an operation of the mobile terminal and automatic recognition between transmitting/receiving units provided in the key device and the mobile terminal.

5 4. The keyless entry system according to claim 3, wherein the door lock device is a vehicle door lock device for locking and unlocking a door in accordance with either one of an operation of the mobile terminal and automatic recognition between transmitting/receiving units provided in the door lock device and
10 the mobile terminal.

5. The keyless entry system according to claim 3, wherein the door lock device is a house door lock device for locking and unlocking a door in accordance with either one of an operation of
15 the mobile terminal and automatic recognition between transmitting/receiving units provided in the door lock device and the mobile terminal.

6. The keyless entry system according to any one of claims 1 to 5,
20 wherein the user-ID number data is erasable or modified in accordance with a communication from a key-device security service site to the mobile terminal.

7. The keyless entry system according to any one of claims 1 to 5,
25 wherein the key-device ID number data is erasable or modified in accordance with a communication from a key-device security service

site to an in-car communication device.

8. The keyless entry system according to any one of claims 1 to 7,
wherein the mobile terminal transmitting/receiving unit and the key
5 device transmitting/receiving unit are Bluetooth transmitting/
receiving units.

9. The keyless entry system according to claim 8, wherein the
user-ID number data for identifying a user of the key device is at
10 least one of number data of terminal serial number data transmitted
from a Bluetooth transmitting unit of the mobile terminal and
Bluetooth module number data specific to the Bluetooth
transmitting unit.

10. The keyless entry system according to claim 8, wherein the key
15 device transmitting/receiving unit comprises: a key-device Bluetooth
transmitting/receiving module for receiving user-ID number data
transmitted from the mobile terminal; a key-device ID number data
memory for storing key-device ID number data; an ID-number data
20 comparison unit for comparing the user-ID number data with the
key-device ID number data and outputting an unlock enable signal
when the user-ID number data matches the key-device ID number
data; and a key-device ECU for receiving the unlock enable signal
and transmitting a lock control signal to the key device.

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11. A keyless entry method utilizing a keyless entry system, which

comprises a key device for carrying out locking and unlocking operations, a mobile terminal including a mobile-terminal transmitting/receiving unit for transmitting user-ID number data for identifying a user of the key device, and a key security system

5 including a key-device transmitting/receiving unit for receiving the user-ID number data transmitted from the mobile terminal, said keyless entry method comprising the steps of:

storing key-device ID number data in a Bluetooth transmitting/receiving unit of the key device in advance;

10 storing the user-ID number data in the mobile terminal operated by the user of the key device in advance;

transmitting the user-ID number data from the mobile terminal to the Bluetooth transmitting/receiving unit of the key device;

15 comparing the user-ID number data received by the Bluetooth transmitting/receiving unit of the key device with the key-device ID number data stored in the Bluetooth transmitting/receiving unit of the key device in advance by using an ID-number data comparison unit;

20 transmitting an unlock enable signal to a key-device ECU when the two number data match; and

unlocking the key device by transmitting a lock control signal from the key-device ECU to the key device in response to reception of the unlock enable signal.

25 12. The keyless entry method according to claim 11, wherein the unlocking step is a step of starting an engine start device of a

vehicle.

13. The keyless entry method according to claim 11, wherein the unlocking step is a step of unlocking a door lock device of a vehicle.

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14. The keyless entry method according to claim 11, wherein the unlocking step is a step of unlocking a door lock device of a house.

15. The keyless entry method according to claim 11, wherein
10 software required for the comparing step of the two ID-number data is stored in one of the key-device transmitting/receiving unit and the mobile terminal in advance, or is downloaded from a key-device security service site when required.

15 16. A mounted side unit in a keyless entry system, comprising: a key device for carrying out locking and unlocking operations; and a key security system comprising a key device transmitting and receiving unit for receiving user-ID number data used for identifying a user of the key device from a terminal,

20 said key security system comprising: an ID-number data comparison unit for recognizing a fact that key-device ID number data pre-stored in the key device is identical to the received user-ID number data; and a key-device ECU for receiving an unlock enable signal and outputting a lock control signal to the key device so as to
25 unlock the key device by the unlock signal.

17. The mounted side unit in a keyless entry system according to claim 16, wherein the key device is an engine start device for starting and stopping an engine of a vehicle.

5 18. The mounted side unit in a keyless entry system according to claim 16, wherein the key device is a vehicle door lock device for locking and unlocking a door of a vehicle.

10 19. The mounted side unit in a keyless entry system according to claim 16, wherein the key device is a house door lock device for locking and unlocking a door of a house.